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SHOT AND SHELLS.

IN 1716 there was to be a recast of the damaged guns which had been captured from the French by the Duke of Marlborough. Many persons of distinction had assembled at the Royal Foundry, in Moorfields, to see the performance. Amongst the observers was a young German of the name of Schalch, who was travelling to improve himself. He noticed that the moulds were moist, and he knew that the heated metal would produce steam, which could not escape from the moulds, and consequently there would be an explosion. He warned the spectators, and sent a message to the head of the department; but the fact was disregarded; consequently, Schalch and his friends withdrew. Shortly after, London was alarmed by a terrible explosion which had taken place at Moorfields, and which had killed and wounded many people. Red tape was at once put on one side, and Schalch was advertised for by the authorities. He was offered the superintendence of a new foundry, and was requested to choose a more suitable site. Woolwich was selected by him, as there was water and space in the immediate neighbourhood, besides all other facilities. Schalch soon became master-founder, which office he held during nearly sixty years—namely, till his death in 1776.

Thus originated Woolwich Arsenal—which we lately visited, accompanied by an intelligent non-commissioned officer of artillery, who had procured for us, from the commandant's office, a ticket which stated that we, 'being natural-born subjects of her Majesty, might be allowed to enter the Royal Arsenal.'

To describe even superficially all the curious sights in this vast war-emporium would occupy too much space; a few of the most striking objects will, however, be noticed; and we shall endeavour to impart a small amount of the information with which our guide or our senses furnished ourselves.

At about a hundred yards from the entrance-gate, we are conducted into a manufactory in which we observe several large yellow objects which are turning slowly on their axes; these, we are informed, are brass guns in various stages of development. The guns are being shaved by one machine, trimmed by another, having their interiors bored out by a third, and the hard metal is passing in shavings from the guns, as though it were not tougher than apple-peel. The noise is deafening, and we gladly pass outside the door to be enabled to hear some of the explanation which our guide can afford us, with regard to the previous and future history of the revolving metal,

which already assumes the appearance of guns. The following facts are then communicated to us:

That the 'boring department,' as it is called, out of which we have just stepped, is for the finishing of what are called brass guns only. These guns are all cast in the Royal Arsenal, and consist of 3, 6, 9, and 12 pounders, 24 and 32 pounder howitzers.

'What is the difference between a gun and a howitzer?' we ask.

'Well, sir, a howitzer throws a hollow shot or shell, and is consequently made lighter, in proportion to the size of the bore; the quantity of powder used is also less, being about $\frac{1}{3}$ th the weight of the shot, whilst the charge of a gun is about $\frac{1}{4}$ d or $\frac{1}{5}$ th. Howitzers are very useful for what we call ricochet-firing—that is, a sort of duck-and-drake style. To obtain a long range with this small charge, we give greater elevation to the howitzer.'

We are also informed that a field-battery of artillery usually consists of four guns and two howitzers; and that what are called field-guns, are the brass guns and howitzers which have been mentioned; brass being lighter than iron, is better adapted for field-service, or where the artillery are required to move with rapidity.

The early history of the mass of metal which eventually becomes a gun, is as follows: a mould, of a size larger than the required gun, is first formed; into this mould the metal, while in a state of fusion, is poured, and is allowed to rise two or three feet above the required height of the gun, so as to form what is called a 'dead head.' Into this dead head all the impurities of the metal will rise; and when the gun is taken to the boring department, the head is cut off, and is remelted with fresh metal. The composition of brass guns is 10 parts of tin to 90 parts of copper.

The most delicate operation in this department is that of boring, for the deviation of one-tenth of an inch in the direction would be a fatal affair. The boring is thus accomplished: the axis of the piece is first obtained, and the gun placed horizontally; a screw with a drill, which is propelled forward by a hand-wheel in the direction of the axis of the piece, makes a small hole, which is enlarged by the application of another drill. The gun is then taken to the boring and planing machine, where it is made to revolve. The muzzle and base ring are turned, in order that they may serve as guides in the boring; the boring-bar is then directed against the face of the piece, and the boring proceeds. When the gun has been formed according to approved fashion, and has a muzzle, and chase, a first and second reinforce, &c., it is

not admitted into the society of its finished brethren until it has been most severely tested.

The proofs through which our yellow friends have to pass are numerous; first, each gun is measured and gauged, externally and internally, and in all directions; then large charges of powder and shot are fired from it, much larger than will ever be required in practice; then, by way of variety, water is forced into the bore of the gun, and allowed to remain about a minute. A few days after this, the gun is made use of, and by means of a mirror, the rays are thrown into the bore, and the very bowels of the gun examined to discover how the water-cure was endured. If any wet parts appear, woe betide our yellow friend, for a piece of wax is then inserted, an accurate impression is obtained of the flaw which must exist in his interior, and his weakness is exposed to unrelenting judges.

If all these examinations be passed in a satisfactory manner, the gun is then sighted, and finished, and takes its place amongst the batteries, when a vacancy occurs.

Having gained this information, we re-enter the department, and note the boring and trimming. Slowly but surely the machinery revolves, whilst two or three men, whose nature appears as hard as that of the metal around them, with compass and rule, occasionally readjust a screw or slightly check a revolving wheel; unrelenting steel chisels scrape and rasp the brass, whilst a groan now and then comes from the interior of a bore, as though the suffering was great. Nothing but strong nerves will do here; we already feel a sort of creeping coming over us; and when a workman, unheard amidst the noise, gently touches us, and asks us to make way, we start, almost jump, in the temporary dread that one of the spiky steel scrapers has artfully approached us, and is about to take a shaving of flesh from the small of our back.

These brass guns, when used, are manned by six or seven men; each man has his special duties, and the several offices are as follows: No. 1 is usually a non-commissioned officer, and has charge of the detachment, takes the aim, and gives the elevation, &c. No. 2 stands on the right-hand side of the gun, near the muzzle; his duty is to sponge out the gun after each discharge, and to ram in the powder and shot. No. 3 arranges the ammunition in his hands, and slips it into the muzzle, when No. 2 has sponged. No. 4 places his finger over the vent during the sponging, so that, when the sponge is withdrawn quickly, a vacuum will exist in the bore of the gun, and any piece of ignited cartridge which might have remained in the bore would hence become extinguished. Accidents seldom occur to the gun detachments, owing to the training which the men undergo before they are trusted with ammunition; but if a small piece of ignited flannel cartridge did by chance remain in the gun, the sponge and its rammer, together with both the arms or hands of No. 2, would be blown away when the fresh charge was rammed into the chamber.

When the powder and shot are placed in the gun, No. 4 pricks the cartridge with a sharp-pointed wire, and No. 5 then fires. Nos. 6 and 7 are employed in bringing the ammunition from the limbers to No. 3.

When the word 'load' is given by No. 1, each of the men starts at once and performs his work until the loading is complete. We are informed that four shots can be fired during one minute of time from any of these brass guns, and that our guide, at the time a No. 1, fired from a 9-pounder, at a range of nine hundred yards, five shots in seventy seconds, and, moreover, that one shot of the round struck the target; but this he considers 'too fast to last,' and likely to endanger the arms of No. 2, or the accuracy of the aim.

When brass guns are fired for any length of time with rapidity, they droop at the muzzle, and then become unserviceable.

As a proof of the accuracy of the present artillery-fire, our guide informs us that, in a fight between some guns manned by the royal artillery, and some manned by the mutinous sepoys, near the village of Moocha, in India, our guns, at a range of six hundred yards, fired three rounds, during which the *sponge-staves* of two of the sepoys' guns were cut in two by our shot, and consequently that loading and firing were rendered impossible, until fresh staves could be procured; in the meantime, however, nearly all the sepoys around the guns were killed or wounded. When such results are obtained, it is evident that compass, rule, and machinery must perform their work without a fault.

We quit the boring department, cross over a road, and enter a vast iron-roofed building, in which some six hundred or seven hundred men are at work. A dull noise, caused by revolving wheels, here salutes us; but all appears well greased, and as though things moved comfortably. Our attention is first directed to the engine, which is situated in a room on the left of the door by which we entered. This is in itself a spectacle—its movements perfect, and its power unquestionable. From the engine-room we pass towards a square sort of machine, on the upper part of which are four wheels, or rather narrow drums; on each of these drums are coils of lead-rope, about the diameter of the Atlantic cable. The machine is in motion, and we notice that rifle-bullets continue dropping from the lower part of the machinery into a box placed for their reception. At the first glance, we cannot trace the connection which exists between the lead-rope above and the bullets below; but whilst our guide is explaining that this is 'the Minié-bullet machine,' we observe the working of the wonderful process.

The leaden rope passes from the drum above into a hole lower down in the machine. Every revolution of a wheel causes about an inch of this lead to protrude from the hole. As the lead protrudes, two iron fingers, with a most bland don't-mention-it sort of motion, close on the piece, hold it for an instant, descend, and the piece of lead is separated from the rope, as though it were a piece of soapy cheese instead of metal. We peep amongst iron bars and wheels, and find that the iron fingers drop the inch of lead into a sort of case, where it is quietly forced into a mould, gets a nick from another bit of iron, and tumbles down a Minié-rifle bullet, with its hollow end complete, in which is a mark to indicate what machine performed the work.

A lover of machinery might pass an hour in examining this simple and beautiful engine; we have only time to observe that four instruments are at work on each machine, that each instrument drops about forty bullets per minute, and that four machines are in motion. A process of multiplication enables us to conclude that, during the ten minutes which we have passed in looking at these machines, something like six thousand bullets have been formed—and if but one bullet in five hundred proves fatal, that the death-warrant of about a dozen men has been signed during the time.

We are next attracted to some small machines, which appear to work without any aid other than a small boy—these are busily employed in making small wooden cups which fit into the Minié bullet. The neatness with which the work is performed is marvellous, and we are informed that these cups cause the lower part of the bullet, when it is fired, to expand, and thus to do away with windage—windage being the space between the sides of the bullet and the bore of the gun.

We are enabled to walk down the centre of this large building by means of a passage, whilst on each side we notice huge iron shot, some being scraped, some having holes bored in them, and some being fitted with brass screws; these, we are informed, are shells, and obtain the following account of them.

Shells are hollow shot, and are used for one or two purposes: first, they are presented to an enemy as a mine; that is, they are filled with powder, fired into an enemy's town, and arrangements made so that they burst after they fall into the ground, or into houses. They also serve to convey musketry-fire to a distance, for being filled with bullets, they travel like solid shot to the distance of a mile or more, then burst, and scatter bullets and pieces of shell upon the selected quarter; in this form they are called shrapnell-shells. They also serve to give the enemy a sort of back-hander, when he is sheltered behind a parapet, &c., as when they burst, the splinters will fly in all directions. The details necessary to obtain these pleasant results, although of everyday occurrence to my guide, were still like Greek to me, so I was led to ask the following questions:

How do you arrange so that the shell shall burst at the required time?

By what means do you discover the distance of the object at which you are firing?

And why are some shells fired at much higher angles than others?

Shells are burst by means of fuses. Here is a fuse: you see an opening down the centre of this piece of wood; well, in that opening a composition is placed, and is driven hard by means of a mallet. The composition consists of saltpetre, sulphur, and mealed powder. When the fuse is complete, it is like this (showing me a fuse which appeared like a lead-pencil, about one inch in diameter—the lead part being represented by the composition). Now, this fuse burns like all others—at the rate of one inch in five seconds of time; therefore, $\frac{1}{5}$ ths of an inch in one second. Now, we know how fast our shot travels; so when we want the shell to burst at a certain spot, we bore a hole in the fuse, so that the flame from the composition may thus reach the powder in the shell; we drive the fuse like a cork into the shell, and away they go. The flame of the powder in the gun lights the composition on the top of the fuse, and the shell bursts in one, two, or three seconds, according as we bored the hole at $\frac{1}{5}$ ths, $\frac{2}{5}$ ths, or $\frac{3}{5}$ ths from the top. You see these circular marks on the fuse; well, these are just $\frac{1}{5}$ ths of an inch apart, so we can make the hole correctly at once.

With regard to judging the distance at which an object may be, we are informed that very few individuals are 'good hands' at it; but that the authorities are now cultivating this branch of education amongst the non-commissioned officers of the army. Our guide says that he finds a pencil, which he shows us, very useful in this matter, for a man at a thousand yards looks as big as a small mark which he has on his pencil when he holds it at arm's-length. On his pencil are several marks, which he says enable him to judge of any distance up to twelve or fourteen hundred yards, provided he can see a man.

With regard to some of the shells being fired higher than others, he tells us that the high ones are fired from mortars at an angle of 45° , and the range is increased or decreased by adding powder or the reverse; whilst with howitzers, the elevation of the piece will give an increase of range, the charge of powder being always the same.

Shells are cast of sufficient thickness to withstand the shock of the explosion of the gun, and at the same time thin enough to be burst by a small charge of bursting-powder.

Brass fuses are used for shells which are intended

to act against ships, as the wooden might be broken off by the collision.

Shot and shell, iron and wood, are being scraped, shaved, and formed into all sorts of shapes, for the sole object, as it appears, of destroying human life. A feeling of melancholy comes over us as we contemplate the building in which so much skill and talent have been displayed, and then consider the purpose for which it has been erected.

We pass on to some machines which are hard at work punching small crosses out of copper sheets. This, we are informed, is the first state of a percussion-cap. The crosses are then taken to another machine, where a nipple presses on their centre, and completes the shape. Some of the machines do this work at once, both punch out, and press into shape.

The caps are then arranged on a frame or brass plate, in lots of 1000, and are placed underneath two steel plates, which are separated by a sheet of paper; these two plates and the paper have holes corresponding to the cap-plate. The upper plate can be moved on one side, thus destroying the communication. The holes are then filled with a composition of mercury, chlorate of potash, pounded glass, sulphur, and saltpetre; the plate is moved a little, the communication restored, and the charge is then instantly dropped into each of the thousand caps.

The frame with the caps is then taken to another machine, and placed under it; a large wheel is spun round, and the composition in each cap pressed firmly down, the pressure being about forty pounds on each cap.

The frame is then placed under another very simple-looking machine, to allow each cap to obtain a dose of shell-lac and spirits of wine, which is given by means of a number of small ends, which are dipped into the composition, swung over above the caps, and with a blow, deposit the drop into each cap. An arm regulates the brass frame, so that a fresh row is brought each time under the ends.

After the caps are dried, they are arranged by small boys in lots of twenty-five. These boys, as we look at them, work with redoubled vigour; arms, body, fingers, and head, appear as though moved by wires. The caps are flung, five-and-twenty at a time, into brown paper, which is then doubled up by one boy, and thrown to another, who ties it up; these parcels are then arranged in a box, and are ready for serving out.

We have scarcely time to do more than glance at many other interesting performances which are going on around us—boys and men, wood and iron, are all hard at work; and we cannot forget that they are working at machines which are for the purpose of destroying life. Still the individuals do not appear more fierce than men usually are—they work as calmly as though employed in making the elixir of life.

We make our exit on the opposite end of the building to that by which we entered, and walk towards the river Thames. Here we see piles upon piles of shot and shells of every size. Some huge shells are lying on the ground, and boldly assert in white figures that they are 'twenty-six hundredweights and some odd pounds in weight. These are the 86-inch shells belonging to the large mortar at present under trial at the Woolwich marshes.

Shells, I am informed, are always spoken off with regard to their diameter, while shot are indicated by weight. Thus we speak of $5\frac{1}{2}$ -inch, 8-inch, 10-inch, 13-inch shells, while shot are called 24, 32, 56 pounders. The 13-inch shell weighs 198 pounds, and will contain nearly eleven pounds of powder; with a charge of seven pounds of powder, it will range 2100 yards, and should have a fuse of about $5\frac{1}{2}$ inches.

We ask our guide, as a test of his memory, what he would do with a shell for a 9-pounder gun, supposing a body of sepoys were at the distance of a mile from his battery.

He at once informs us that if the shell were a 'spherical case'—that is, a shell filled with bullets—he would give it one inch and two-tenths of fuse, and give the gun about 7 degrees of elevation; this length of fuse would cause the shell to burst about forty or fifty yards before it reached its destination.

'And what would be the effect produced on the sepoys?'

A smile comes over the bronzed face of our guide, as much as to say that he wished he could see the effect in reality; and he tells us that 'this 9-pounder shell contains forty-one bullets, together with the splinters of the burst shell, would go *plop amongst the sepoys* like a charge of small-shot amongst a covey.'

Referring to the four shots per minute and the six guns in a battery of field-artillery, we feel no surprise that this branch of the army is, at the present day, that which may alone win a battle; for one thousand bullets per minute, in addition to the splinters of the shells in which they were conveyed, thrown with accuracy to a distance of a mile, would, we imagine, cause even braver men than our sepoy enemies to consider that 'discretion is the better part of valour.'

My guide knows these particulars by heart; and he informs me that when the shell bursts, the splinters will sometimes fly back 800 yards, such a case having occurred during his own experience in the Crimea.

We note, as we pass on, some green guns standing on green skeleton-looking carriages—these are Russian trophies. Stores filled with harness, saddles, and equipment of every description, are on each side of us; these we pass by with only a glance, and also a new building in which there are some very handsome gates, formed from the captured Russian guns, and a very tall chimney. This building is for the purpose of casting iron guns, which were formerly supplied from Carron.

The next place we visit is like a huge carpenter's shop; this is the carriage department, in which gun-carriages, ammunition-wagons, hospital-carts, &c., are made. The most remarkable object here is a saw, which appears like a piece of tape, and which runs round two wheels. This saw cuts wood into any shape—will cut one's name and address out of a solid block of oak in a very few minutes; V. R., very neatly cut out in wood, lies on a sill near, and attests the power of the instrument. The spokes of the gun-carriage wheels are also formed by a most ingenious instrument. An iron spoke serves as a model, and a wheel rests against this and regulates the movements of a rapidly revolving iron scraper, which cuts from a rough piece of wood a spoke exactly similar to the model. The felloes and spokes were formerly pressed together by means of hydraulic-presses, but there appears some doubt about the success of this method.

We quit the arsenal, much gratified by our three hours' visit, but still impressed with the idea that the time may come when human nature may have so much advanced, that this establishment will be a relic of past and barbarous ages, and men will be able to traverse the earth, from east to west, and from north to south, and it shall be that whosoever meets a man shall meet a brother and a friend.

Upon expressing these opinions to a companion, we are assured that we have taken a wrong view of the arsenal; that if we look back upon past ages, we shall find that when men used bows and arrows, there was much greater slaughter than now, in the days of Minié bullets and shrapnell-shells. He tells us to hear Shakspeare, who says, speaking of Agincourt:

This note doth tell me of ten thousand French
That in the field lie slain;

and yet, during all the siege of Sebastopol, we had not more than one-third of that number disposed of by bullets. Therefore, the more shot and shell that are turned out at Woolwich, the greater number of lives will be saved in future wars; and that when the weapons used are even more deadly than Minié bullets and spherical case, there will probably be a great decrease in the slaughter. This is a problem not difficult for us to comprehend; and we determine in future to look upon Woolwich as the Peace Society's depot; the arsenal, as the special work of a Humane Society; and shot and shells as the real Life-preservers.

A SUMMER IN THE CLOUDS.

HAVE you ever been at Cauterets, madam? Cauterets in the Pyrenees? the highest town, worthy of the name, to be found in Europe? No. Nor you, sir? Never. Well, I thought as much, for Cauterets is out of the tourist's beaten track, and the bold Britons who yearly inundate the continent with insular gold and insular French, have not yet found out the little, quaint, old-world watering-place.

Yet, I would not be understood to say that Cauterets is absolutely and entirely unknown to our wandering countrymen. Where, indeed, is a nook so retired as to be quite beyond their reach? Where is a gorge so savage, a desert so blank, a mountain so bleak, as to repel the travellers of our nation. They go about, critical, undaunted, destroying illusions, falsifying proverbs, trampling down prejudices, all over the world. The old impregnable fortresses of nature are stormed by them one by one. No peak so high, no glacier so slippery, but the English foot must clamber and slide there—Mont Blanc is scaled by it, with guides and without them, by day and by dark, from the north and from the south. Even Ararat was not safe. True, it had been held inaccessible for ages; true, the Ark alone was said to have got a footing on its summit. But a party of intrepid Cockneys arrived, scrambled up the 'untrodden solitude' as they would up Richmond Hill, and Ararat's prestige is ruthlessly snuffed out for ever.

So, of course, there are English at Cauterets; a few. The ascent to it is of itself remarkable. You may know the Alpine passes well, you may be familiar with tumbling torrents, milky avalanches, and black pine-woods quivering to the roar of the cascades, and yet be amazed by the Pyrenees. They look so arid, hoary, and inhospitable, beneath a hot blue sky that would astonish a Switzer. The ascent to Cauterets by the post-road, up the narrow vale of Argelès, is no work fit for town-made axles and delicate springs. See—here comes the diligence, broad-wheeled, solid, and strongly hung with *sobots*, and chains, and *mécanique* ready to the *conducteur's* hand, and all the six or eight horses straining, tugging, slipping painfully as they jolt, haul, and jerk the big vehicle up the inexorable hills. Better trust to the diligence, and leave your London-built carriage behind at Pau or Bagnères. So! you have taken my advice. Quite right! We have the *coupé* to ourselves, you see, and a famous prospect. What a jolt! Mercy! another. Can wood and iron, to say nothing of human bones and sinews, endure such dislocating wrenches, and survive? To be sure. Look at those deep ruts, those broken boulders in the way, the work of last week's inundation, or the last *débâcle* of stones that fell from the mountain. The *cantoniers* are hard at it, poor fellows, with shovel and pick; but it will take days to repair the damage done in an hour; so up we go, thumping, bumping, leaping, with an elasticity quite amazing. Up we go, the driver flogging, the horses panting and gasping, the diligence swaying and lurching. This is Barrèges, famous for its healing

waters. You look out, expecting to see a minor Lyon, a score of echoing factories at least, where the celebrated Baréges stuffs are fabricated. What a place! a dreary gorge, fields that seem to bear a crop of nothing but loose stones, some rambling hovels, two cut-throat inns, a forlorn old hen, ten goats, two drivelling *crétins* gibbering in the sunshine, seventeen beggars, all with frightful faces, frightful *goîtres*, and fluttering rags. What a place! Why, as a severe punishment for those for whom the galleys are too good, don't they send the worst class of criminals here? Why, if the French are blind to the advantages they possess, don't we obtain leave to transport our own ticket-of-leave men and garrote-robbers to Baréges? As for invalids, the waters had need to be healing indeed if they can counteract the saddening influence of the landscape. Yet see, our passengers are leaving us. The dyspeptic Spanish bishop, and the shuddering countess from Paris, and the sallow cloth-weavers from Toulouse, and the Bordeaux wine-merchant, and the two nuns with the rosaries, are all getting out. Never mind. The *intérieur* and *rotonde* will be empty, and we shall go all the lighter up to Cauterets; and no bad thing, too, for the high road now becomes a high road indeed. Up we go, winding and turning, always on the brink of the foaming Gave, that raves and tumbles, and hurls its spray into our faces now and then, as if in play, and then leaps down a rock, and vanishes in misty vapour.

Higher, and higher yet. We turn an angle of the sharp rock, and lo! what a glorious prospect of mountains, piled up, snowy peaks above snowy peaks, belts of black pines, far-away cataracts, and the wondrous Circle of Gavarnie, a mighty semicircle of dazzling snow. Round another angle, and we see only the walls of stone, the red-tasselled mules, the bare-legged Spanish muleteers, the carts of wine or oil casks, that squeeze narrowly by, and the chafing Gave speeding arrow-like down the declivity.

Higher, and yet higher. How the horses strain. We must be getting up above the clouds almost. To be sure we are. We *are* above them, for look along the valley, and see, floating below us, a mass of vapour, gray, and black, and blood-red in one place where the setting sun touches it. Those are the clouds. Higher yet! a nightmare of toiling horses, cracking whips, and a bumping carriage. Hurrah! This is Cauterets, with its fountains, its marble-fronted houses, and its streets paved with broad stones in Spanish fashion. See what noble peaks shoot up around it, black with pines, silvery with ore, fleecy with snow! The sun is sinking, and, swoop! down come the gray clouds from the peaks, filling the air with mist, and hovering over the chimneys like smoke in London. It is very cold for summer—quite frosty. But you are from three to four thousand feet above the level of the sea; you have snow and ice all round you, and must not wonder if you shiver in July, or freeze in August, after sundown.

What a lively scene! and yet not by any means French. Indeed, you have no small difficulty in realising that you are still in France. It is the height of the bathing-season, and the streets are as gay as if a fair were going on. It is a fair. Booths after booths, where all sorts of pretty things are displayed in tempting profusion, the shopkeepers themselves being more remarkable than their wares. No commonplace, rosy, close-shaved *bourgeois* are there; no tight, trim, pale, eager shopkeeperesses, such as lately sold you bad gloves in the Rue d'Antin, or gave you short change for a guinea in the Marais. No, no. Here are Spanish *donnas* in veil and velvet jacket; Greek pedlars in scarlet caps, Albanian vests, and white Hellenic petticoats; turbaned Moors and Turks, grave and sparing of

speech; Italians, Portuguese, all the people of the south, elbowing a few amber-bearded Germans, who have come to pick up among the Pyrenees wherewithal to fit up a shop at Mannheim or Nürnberg.

And the purchasers are almost as worthy of notice. There are some Parisians, regular *flâneurs*, splendid in glossy broadcloth and spotless linen, staring at the 'savages' through their gold mounted eye-glasses. Just so, with the same cool indifference, the same half-impertinent assumption of superiority, would they contemplate a tempest, or a battle, or an eruption of Cotopaxi, or a vaudeville, or Brigham Young preaching to his Mormon flock. And here are certain other Parisians, who have deigned to adopt part of the 'savage' costume, and walk about smiling benignantly, in coloured *berets* and gaudy sashes, and *sombreros* that will tumble over their noses when they walk, and get blown off whenever there is a gust of wind.

There is a gust now—hold your hat, if you are wise.

Whir! down it comes like an eagle, whisking away many a light object from the booths, and making sad havoc among parasols and wide-awakes. For a moment, all is dust and mist. There, it is over now, and we can proceed. Mixed up with people from Spain, who come to drink, to bathe, to be cool, or to escape being shot as rebels or friends of government by one party or other, are countless smart folks from Bordeaux, Toulouse, all the southern towns. What radiant toilets! You stare to see such spun-glass bonnets, such lace mantles, such silks, flowers, feathers, and finery in general, more than three thousand feet above the Atlantic level. Are all these sparkling butterflies, dressed as if for a Longchamps promenade or a drive in the Park, the real *noblesse* of France, withdrawn from the neighbourhood of a usurping dynasty to flourish in legitimate brilliancy? That stately dame in the brocade from Lyon, blue and black, worth ever so much a yard, must be a duchess at least; and the two pretty creatures in the infinitesimal bonnets, with the antique lace more valuable than diamonds, countesses, no doubt. Not a bit of it. Two words will describe the occupation and source of the wealth and finery of the showiest of the company: if from Bordeaux, wine; if from Toulouse, wool. All wine and wool. That magnificent lady, as glittering, and, I am afraid, as proud, as a peacock, you would stare to see in her husband's warehouse at Toulouse, dressed in skimpy cotton and a plain cap, keeping the books, higgling about *centimes*, distinguishing French merino wool from Spanish, with her eyes shut, if need be. Those pretty girls, demurely following their mother, know nothing of the wine-trade, it is true, for it is not *comme il faut* for the French demoiselle to know anything; but wait till they marry those two black-bearded gentlemen who are now ogling them from that little café, and see if they do not start up full-blown judges of the Médoc grape, cognizant of John Bull's taste to a nicety, how much brandy he will swallow, and how many shillings a dozen he will disburse.

The peasants are worthy of notice, but they bewilder one. What is their national garb? Alas! every vale has its own dress; and one is kept in a perpetual puzzle as to which deserves the golden apple. See, a Campan man, in white, with a flat white cap, and a blue sash and sandals, is talking to a peasant-girl of Luchon, in her graceful crimson or scarlet hood, bare feet, and sky-blue kirtle. That group of hard-featured mountaineers, in the broad bonnets of brown or blue—just the Scottish bonnet—contrast famously with the opposite cluster of milkmaids from Eaux Bonnes, whose blue mantles, gaudy jackets, and striped petticoats, eclipse any theatrical peasant-dress ever devised by the most lavish manager.

Night has stolen a march upon us as we contemplate these things; for owing to the high peaks, the days are shorter at Caunterets than in the lower world; and thus, the nearer you ascend towards the sun, the less you see of his radiance. There, the snow is rose-coloured, pinkish, violet, gray, almost black. In a few moments more the summits will have no more light on them.

Down come the clouds, and we had better house ourselves while we may. House ourselves, did I say? It is no such easy matter. Some of us are hardy, some are rich, but how few there are who unite the purse of Fortunatus to a hermit's scorn of luxuries. Let us enter some of these marble-fronted houses, and inquire for a lodging. Heyday! have we got into Spain without knowing it? Here is the same bare discomfort, the same bleak absence of all we are used to deem indispensable to civilised life, that distinguishes the Peninsula. Large rooms, with doors that won't shut, and windows that gape like dead oysters; no carpets, no bells, no sofas, no looking-glasses, sundry little beds, a few cane-chairs, and a clock that has indicated half-past twelve for a score of years. Noisy staircases, a carpenter below, a locksmith above you, a kitchen of Homeric proportions, reeking with garlic from the savoury *podridas* simmering on the fire—such is the *appartement* proposed to you. Perhaps I was wrong to say 'proposed,' for lodginghouse-letters at Caunterets are not accustomed to offer, to advertise, and recommend their domiciles; they are better used to listen calmly to the requests of the houseless stranger who seeks a roof and a bed on any terms. Even the screaming hand-maidens who are to wait on you, and whose language is a polyglot of Basque, Spanish, and Catalan, seasoned with a sprinkling of French, are by no means eager to insure a new tenant for the wealthy proprietor of the *casa*. But at last you get a hearing. What? twenty francs a night for that doghole of a double-bedded room opposite the saw-mill! forty francs for two narrow cells that overlook the marble-cutter's yard! twelve for the loft with a truckle-bed in it! Nonsense! the people must be joking. Let monsieur try elsewhere, if he pleases. So monsieur tries, and tries again, and wears out shoe-leather and patience, and always the same story—from ten to forty francs for one room, *per diem*. Let us try the inns. There are plenty of them. At one or other of the hotels there takes place a ball almost every night—a ball at which the ladies shall appear dressed as for the Tuileries, and yet those hotels are worse than the roadside inns of Italy. Again, fifteen, twenty, thirty francs for a bedroom! You express a wish for a sitting-room. The natives hold up their hands and burst out into a hearty laugh that makes you feel ashamed of yourself as an unreasonable Sybarite.

We must e'en dine in the public *salle*, though a fine odour of garlic makes it detestable to northern olfactories. What can we have for dinner? Stringy animal fibre, unripe fruit, thin soup, cheese, and a few potatoes; but do not imagine that the bill will be proportioned to the meagreness of the cheer. Are there no vegetables? Monsieur forgets we are more than 3000 feet above the sea. No eatable meat? What! at 3000 above the sea? Is all the bread bad? Does fruit never ripen? Can the vineyards of Médoc send to Caunterets no wine a little less sour than vinegar? Monsieur, we are 3000 feet and more above

O yes, I know; thank you. There are no shops—the gay booths excepted—save of the humblest class. Tea is ten shillings a pound; sugar, dear in proportion; writing-paper, about two sous a sheet. It is 3160 feet above the sea. It is too high for civility, though not, alas! above the reach of fleas. If you expect letters, you must go

and fetch them, and jostle for half an hour in a crowd that besets the post-office. No letter-carriers exist—3000 and odd feet above the Atlantic. If you quit your inn for a lodging, the landlady will scold you in good round terms for your want of politeness: for the etiquette of Caunterets is to stay where you first settle yourself, fleas, garlic, noise, and extravagance notwithstanding. Yet one need not always grumble. We have slept, in spite of the fleas; and if our dinner was meagre, the cream and butter at breakfast do honour to the mountain dairies. The town is all alive, picturesque, noisy, swarming. Troops of ladies and their attendant cavaliers are starting on horseback for the Pont d'Espagne, or the Lac de Gaube, or the Cercle de Gavarnie.

The whole street is full of lean wiry horses, all over red tassels and fringe, plunging, pawing, and capering, as the long whips of the guides marshal the cavalcades. Every one seems good-humoured, talking and laughing loudly. There go a party of adventurous sportsmen, each with two guns, one on each shoulder, like Robinson Crusoe in the pictures; and theatrical figures they are, all gaiters, sashes, pouches, belts, and dirks. They are proceeding, under the tutelage of certain professional hunters, to chase ibexes, bears, lizzards, or what they can get. What they can get is generally *nil*, for day by day bands of these heroes leave the town, bristling with weapons, and much encouraged by the waving of ladies' handkerchiefs, and return without having achieved even the slaughter of a tomtit. There pass the valetudinarians on their way to the waters of the hot spring—and is that, can it be, our old friend Guy Faux, borne on men's shoulders? No; it is only a respectable old lady in a wonderful open sedan, being in fact an uncovered beehive, perched on poles, and in which those who love not to walk or ride are carried along as if in triumph. Here come a band of Spaniards who have brought over huge baskets of live poultry for sale. What a race of giants they seem among the low-statured, square-built French; and how strange are their turbaned heads, sandalled feet, bare, sinewy limbs, sash-begirt waists, and striped cloaks of black, white, brown, and orange, bequeathed them by their Moorish ancestors.

Here are criers innumerable: negroes selling Madrid chocolate, Turks with sherbet, and two showy confectioners in fancy uniforms, each with a tin can full of hot pastry. Listen! while one of them chants, not unmusically:

Des pains au lait,
Des petits pains au lait;

the other is bawling out that his cakes are real Bordeaux cakes, and have that instant arrived from that famous city, all hot, all hot, all hot, which, as Bordeaux is a couple of hundred miles off, seems rather a bare-faced assertion; but the French will believe anything. Later in the day, we shall have games of strength among the peasants, and dances on the green, and fireworks. But the grand attraction consists in the races. Such races! a Newmarket jockey would hardly believe his eyes. There are flat-races, hurdle-races, and so forth, for the mountain ponies; races of men in sacks, of women with pitchers of water on their heads, and of blind-folded people. But the great lion of the races is a hurdle-race, in which the riders are peasant-girls in their ordinary costume. At every leap, nine-tenths of the fair jockeys are unhorsed; and the scrambling, rolling, and remounting, the laughter, cheers, and excitement of the spectators, make the scene excessively animated, if not well adapted to our insular notions of decorum.

Enough of Caunterets. And yet I must quote one more trait. Look at that mountaineer leading by a

cord, for sale, a monstrous Pyrenean sheep-dog. See how the magnificent white brute strides along, like a shaggy pony, and to be sold for much the same price. This is the oldest family of dogs, probably, in Europe. The famous St Bernard breed are but a junior offshoot of this mighty canine race, the terror of the bear and the wolf these two thousand years and more. Won't you buy the grand old fellow, with his red eyes and waving tail, and that sagacious head? No. Well, if you decline to pay down eight or ten pounds for so formidable a pet, there is another peasant with a basket containing four blind little brutes that you would take for bear-cubs, but they are Pyrenean puppies. The French will tell you they cannot thrive out of the mountains. In the plains, they say, this noble race of dogs pine and perish. Don't believe a word of it. I bought two puppies of the pure breed, brought them down to the low country, and have them still, the fine fellows, as big as calves now.

Well, Caunterets is worth visiting. Nature has given it every picturesque beauty that crag, and peak, and pine-woods, and roaring Gave, and untrodden snow, and darkly blue lake, and raving cataract, blended together can produce; and a Summer in the Clouds, spent in that wild nook, would provide one with a store of mind-pictures that would last a lifetime. [Since this visit to Caunterets some changes have taken place. The road has been greatly improved; and with regard to lodgings and the comforts and luxuries of life, demand has had its usual effect upon supply.—ED.]

OLD ENGLISH MELODIES.

In the present general crusade against organ-grinders and itinerant musicians of all kinds, it is a relief to revert to a period when our ancestors were more tolerant, or, at all events, less critical in these matters. It is doubtful whether the sensitive Londoner of now-a-days would permit St Dunstan himself to perambulate his street with that hand-organ, 'made with brass pipes, and filled with air from a bellows,' albeit the instrument was of the ingenious saint's own construction.

A gentleman's harp—if any modern gentleman happens to possess such a thing—is now, alas! as liable to be taken in execution as his eight-day clock; whereas it formerly enjoyed that immunity from arrest which is at present confined to the two Houses of Parliament. It was, indeed, one of the three things the keeping of which, by the laws of Wales, constituted a gentleman; and none could pretend to that character who did not own one, and, what is more, who could not play upon it. It was expressly forbidden to teach slaves the art of harp-playing, for the same reason that the southern states of America forbid their helots to be taught to read—namely, lest they should thence become those pinks of civilisation which their masters (somewhat hastily) are in the habit of conceiving themselves to be.

In the famous tale of King Alfred in the Danish camp, and in a score of similar legends of that period, we learn how highly was the minstrel's art esteemed, how richly he was rewarded, and how his person was held as sacred as that of an ambassador or herald.

In the third year of King Henry I., the priory and hospital of St Bartholomew in Smithfield was founded by the king's minstrel Royer, which a poet-laureate of modern times would scarcely have the means to do. In the reign of Henry II., Galfrid, a harper, received an annuity from the abbey of Hyde in Winchester, and many of his brethren seem to have been rewarded in a similar manner, if we may judge from the anger of the monks. 'For you do not,' writes John of Salisbury to some eminent personage, 'like the fools of this age, pour out rewards to minstrels

and monsters of that sort, for the ransom of your fame and enlargement of your name.' In the reign of Richard I., minstrelsy flourished very splendidly, and we are all acquainted with the romantic obligation in which that royal captive was indebted to it. Many of the convents even spared neither money nor good cheer to those wandering bards, whom two out of three of our ecclesiastics of to-day would probably consign to the custody of the police. In a certain religious house in Oxfordshire, we read in Wood's history of that county: 'Two itinerant priests, on the supposition of their being minstrels, gained admittance; but the cellarer, sacrist, and others of the brethren, who had hoped to be entertained by their diverting arts, when they found they were only two indigent ecclesiastics, and were consequently disappointed of their mirth, beat them, and turned them out of the monastery.' Richard, the king's harper, to whom his royal namesake gave not only 40s. and a pipe of wine, but a pipe of wine to his wife also, was termed Master Richard, which, says Percy, deserves notice, as shewing his respectable situation.

If the Venerable Bede did not write the two musical treatises which are attributed to him, yet sufficient evidence is afforded in his *Commentary of the Psalms* to prove not only his knowledge of music, but of all that constituted the regular 'descent' of the church from the ninth to the eighteenth century. 'As a skilful harper,' writes he, in his *Commentary* upon the fifty-second Psalm, 'in drawing up the cords of his instrument, tunes them to such pitches, that the higher may agree in harmony with the lower, some differing by a semitone, a tone, or two tones, others yielding the consonance of the fourth, fifth, or octave; so the omnipotent God, holding all men predestined to the harmony of heavenly life in His hand like a well-strung harp, raises some to the high pitch of a contemplative life, and lowers others to the gravity of active life.' And he thus continues: 'Giving the consonance of the octave, which consists of eight strings; . . . the consonance of the fifth, consisting of five strings; of the fourth, consisting of four strings, and then of the smaller vocal intervals, consisting of two tones, one tone, or a semitone, and of there being semitones in the high as well as the low strings.' 'Judging from these passages,' says Mr Chappell, from whose interesting preface to the *Popular Music of the Olden Time*,* most of our information is gathered, the harp does not seem to have been tuned to any particular scale in those early times.

The earliest secular composition in parts that is known to exist in any country is that song of 1250, *Sumer is icumen in*.

ORIGINAL WORDS.

Sumer is icumen in,
Lhude sing cucu!
Groweth sed, and bloweth med,
And springth the wde nu.
Sing cucu!
Awe bleteth after lomb,
Lhouth after calve cu;
Bulluc sterteth, bukke verteth,
Murie sing cucu,
Cucu, cucu!
Wel singes thu cucu,
Ne swik thu naver nu.

WORDS MODERNISED.

Summer is come in,
Loud sing cuckoo!
Groweth seed, and bloweth mead,
And spring'th the wood now.
Sing cuckoo!

* London: Cramer, Beale, and Chappell, Regent Street.

Ewe bleateth after lamb,
Loweth after calf [the] cow.
Bullock starteth, buck verteth,*
Merry sing cuckoo;
Cuckoo, cuckoo!
Well sing'st thou cuckoo,
Nor cease thou never now.

It has a natural drone-bass about it to suit the bag-pipe, 'the true parent of the organ (think of that, O musical Caledonians!), and then in use as a rustic instrument *throughout Europe*.' Surely, if this was indeed the case, wholesale emigration to the other hemisphere must needs have taken place far earlier than we were aware of. In a curious collection of songs and carols of Henry VI.'s time, recently printed for the Percy Society, there occurs this singular wassail-song:

Bring us in no brown bread, for that is made of bran,
Nor bring us in no white bread, for therein is no gain;
But bring us in good ale, and bring us in good ale;
For our blessed Lady's sake, bring us in good ale.

Bring us in no beef, for there is many bones,
But bring us in good ale, for that go'th down at once.

Bring us in no bacon, for that is passing fat,
But bring us in good ale, and give us enough of that.

Bring us in no mutton, for that is passing lean,
Nor bring us in no tripe, for they be seldom clean.

Bring us in no eggs, for there are many shells,
But bring us in good ale, and give us nothing else.

Bring us in no butter, for therein are many hairs,
Nor bring us in no pig's flesh, for that will make us bears.

Bring us in no puddings, for therein is all God's good,
Nor bring us in no venison, that is not for our blood.

Bring us in no capon's flesh, for that is often dear,
Nor bring us in no duck's flesh, for they slobber in the mere. [mire.]

But bring us in good ale, and bring us in good ale;
For our blessed Lady's sake, bring us in good ale—

a recurring sentiment, which reminds us of a newly-added verse of that popular modern melody, *We won't go home till morning*—(namely, We can't eat any more, we can't eat any more, we can't eat any more, but we'll have some more to drink.)

It must be remembered that these songs are quoted in the book we have referred to, at least as much for the sake of the music as of the words, and that we are therefore prevented by the nature of our periodical from rendering the volume more than half the justice due to it. Mr Chappell has, by his research and skilful treatment of the subject, quite reproduced, to ear as well as eye, the vocal music of three centuries ago. The following poem, however, can at least be appreciated without the accompaniment, and we can imagine its effect when played as directed, 'slowly, smoothly, and with great expression.'

THE THREE RAVENS.

There were three ravens sat on a tree,
They were as black as they might be;
The one of them said to his mate:
Where shall we our breakfast take?

Down in yonder green field,
There lies a knight slain, under his shield.
His hounds they lie down at his feet,
So well they their master keep.

* 'Frequents the green fern.'

His hawks they fly so eagerly,
There's no fowl dare him come nigh.
Down there comes a fallow doe,
As great with young as she might go.

She lifted up his bloody head,
And kissed his wounds that were so red;
She got him up upon her back,
And carried him to earthen lake.

She buried him before the prime:
She was dead herself ere even-song time.
God send every gentleman
Such hawks, such hounds, and such a leman.

The conclusion of this is quite as sad, and certainly as touching, as that of the modern favourite of the public, *Vilkins*, which, and absurdities like which, it loves not at all wisely, but too well.

We English, as it seems, have a great and ancient reputation to keep up in this matter of music and singing. Erasmus asserts that, in his time, we challenged the prerogative of having the most handsome women, of keeping the best tables, and of being the most accomplished of any people in the skill of music. The ambassador of the Doge of Venice, writing home of the chapel-service of Henry VIII., says: 'We attended high mass, which was chanted by the bishop of Durham, with a superb and noble descant choir;' and again: 'The voices of the choristers are really rather divine than human; they did not chant, but sung like angels (non cantavano, ma jubilavano); and as for the deep bass voices, I don't think they have their equals in the world.'

During the reign of Elizabeth, not only was music a necessary qualification for ladies and gentlemen, but even the city of London advertised the musical abilities of boys educated in Bridewell and Christ's Hospital, as a mode of recommending them as servants, apprentices, or husbandmen.

'Tinkers sang catches; milkmaids sang ballads; carters whistled; each trade, and even the beggars, had their special songs; the base-viol hung in the drawing-room for the amusement of waiting visitors; and the lute, cittern, and virginals, for the amusement of waiting customers, were the necessary furniture of the barber's shop. They had music at dinner, music at supper, music at weddings, music at funerals, music at night, music at dawn, music at work, and music at play.'

Dekker informs us that the usual routine of a young gentlewoman's education was 'to read and write; to play upon the virginals, lute, and cittern; and to read prick-song (that is, music written or pricked down) at first sight.' Moreover, when a writer of that period praises a lady, skill in music is certain to form one of the virtues he enumerates:

Her own tongue speaks all tongues, and her own hand
Can teach all strings to speak in their best grace.

In Charles II.'s time, we find Mr Pepys, although half a Puritan in his youth, delighting in all kinds of music. 'Nov. 21, 1660. At night to my violin, in my dining-room, and afterwards to my lute there, and I took much pleasure to have the neighbours come forth into the yard to hear me.' Dec. 3. 'Rose by candle and spent my morning in fiddling till time to go to the office.' 28th. 'Stayed within all the afternoon and evening at my lute with great pleasure.' In the cellars at Audley End, 'played on my flageolet, there being an excellent echo;' and again: 'I took my flageolet and played upon the leads in my garden, when Sir W. Pen came, and there we stayed talking and singing, and drinking great draughts of claret.' Nay, 'snob' as he has undoubtedly shewn

himself to be with regard to social distinctions, he does not hesitate to join his harmonious servants both with voice and instrument. 'After dinner, my wife and Mercer, Tom (the boy), and I, sat till eleven at night, singing and fiddling, and a great joy it is to see me master of so much pleasure in my house. The girl (Mercer) plays pretty well upon the harpsichon, but only ordinary tunes, but hath a good hand; sings a little, but hath a good voice and care. My boy, a brave boy, sings finely, and is the most pleasant boy at present, while his ignorant boy's tricks last, that ever I saw.'

These pleasant gifts, however, which at one time seem to have pervaded all classes, suffered a great blow at the hands of Puritanism. In 1586, while parliament is sitting, a pamphlet is addressed to it, called *A Request of all True Christians*, and praying that 'all cathedral churches may be put down, where the service of God is grievously abused by piping with organs, singing, ringing, and trowling of psalms, from one side of the choir to another, with the squeaking of chanting choristers, disguised (as are all the rest) in white surplices; some in corner caps and filthy copes, imitating the fashion and manner of Antichrist the Pope, that Man of Sin and Child of Perdition, with his other rabble of miscreants and shavelings.'

Dancing appears to have called forth quite a torrent of that blasphemous invective in the use of which the religious ascetics of all times have been so great proficient. 'The way to heaven is too steep, too narrow, for men to dance in and keep revel-rout. No way is large or smooth enough for capering roisters, for jumping, skipping, dancing dames, but that broad pleasant path that leads to hell;' which sentence is indeed almost the only one, out of many, which is fit for quotation. Certainly we seem to have had some national customs before the steeple-hats got the better of the crown, which would even now-a-days be held somewhat too easy and familiar. It was not only customary to salute a partner at the beginning and end of a dance—and there were some dances with ever so much kissing in them besides—but also on first meeting a fair friend in the morning, and on taking leave of her. The custom of kissing before the Puritanic era was universal, and, at least for two centuries before, peculiarly English.

Still there were lessons, and moral ones too, taught in these good old times, which it were well indeed if we moderns should lay to heart and profit by. There is a beautiful ballad of King James I.'s time, too long for us to quote more than the first verse, which contains far more nobility and wisdom than all Mr Prynne's philippics:

I am a poor man, God knows,
And all my neighbours can tell,
I want both money and clothes,
And yet I live wondrous well.
I have a contented mind,
And a heart to bear out all,
Though fortune being unkind,
Hath given me substance small.
Then hang up sorrow and care,
It never shall make me rue;
What though my back goes bare,
I'm ragged, and torn, and true.

Mr Chappell's collection is in all respects a remarkable work, one of those which an honest enthusiasm may, but a money-fee never can, produce. Having first spent many years in gathering a series of the forgotten music-books of the past, and in taking copious notes from such collections as exist in manuscript in public and private libraries, he has here given us every song and ballad tune that the people had a favour for between the reigns of the last Henry

and the first George—that is, every one which has been preserved—accompanied by the original verses, and illustrated with abundant annotation. As a matter of course, we have here the words and notes of most of the songs alluded to in Shakespeare, Beaumont and Fletcher, and other authors of the sixteenth and seventeenth centuries, including that which Desdemona tells us was sung by her mother's maid called Barbara, all Ophelia's sad ditties, and so forth. The work is indeed a complete museum of this class of popular antiquities, a curious and entertaining record of past generations in one of their most interesting social aspects.

A SLIP BETWEEN CUP AND LIP.

CHAPTER I.

SOME one has demanded, I really forget who, how it is that so many cobblers have become wonderful men. I will just mention two, who, though dead, are still exercising a silent and a mighty influence upon Christendom—Jacob Behmen and George Fox. Newton himself 'ploughed with Behmen's heifer;' and so we owe, indirectly, the greatest scientific impetus of the modern world to a theosophising shoemaker. The great William Law, the spiritual father of John Wesley, and of the Methodist movement of the last century, and—as some say—of the Anglo-catholic movement of this century, confessed that the humble Jacob was his true teacher. If so, we owe the two greatest religious impetuses of modern England to a poor Christian cobbler.

If this were to be an essay upon wonderful shoemakers, I think I could add a list which would be really surprising. However, it is not to be an essay upon wonderful shoemakers, but merely the transcript of one episode out of the life of a certain poor honest journeyman cobbler, by name William Griffin, and out of the life of his betrothed sweetheart, Anne Moss.

William Griffin and Anne Moss had been engaged since she was fifteen, and he twenty years old. Great poverty, a drunken father, the death of her mother, and the necessity of independent work, had made Anne a thoughtful little woman long before she had reached the age called womanhood—a fact which I feel it necessary to state, as the prudent reader might otherwise stop during the relation, to say over to himself, or herself, three or four sober old proverbs concerning the evil of very early engagements, and the ignorance of their own minds supposed to be generally characteristic of young girls; with which proverbs I most cordially agree, reserving the right of exclusion from all their conditions to Anne Moss alone. For if, as a certain spasmodic poet has said, we are to count life by heart-throbs, not by minutes, why, then, our little Anne could reckon up heart-throbs enough at the age of fifteen to attest her right to all the honours, privileges, and considerations of fifty.

Anne was a little less than fifteen when she took the place of a maid-of-all-work. This exchange of her miserable home for domestic service was merely an escape out of the fire into the frying-pan. Both of them were a fiery trial to the poor girl; but the latter burnt a little less fiercely. For, although her mistress never beat her, never swore at her—while her father frequently did both—because the lady had not heat or passion enough in her nature for such violent exercises, yet she made the little servant's life very bitter to her by her infinite applications of 'Thou shalt not.' Everything that was humane, natural, pleasant, or desirable, had this waving before it, like the flaming

sword, to keep off Anne's eyes, hands, and longings. Above all, she was allowed no followers. Mrs Darah, having never—she thanked goodness—been in love herself, considered love the most ridiculous folly and delusion under the sun. Even if it might be indulged in by people who had time and money for it, it certainly was not fit for servants. She was often heard to say that love made more thieves than malice or selfishness did; destroyed cold meat more rapidly than fly-blows; and would empty a larder quicker than a whole hungry family. She had had servants with huge appetites, and servants with lovers: she found both expensive; but the latter the worse; for even if their own appetites were ordinary, their lovers' were usually exorbitant.

In spite of these restrictions of her mistress, Anne met William very often. They managed to have walks together, to betroth themselves to each other; and after five years' steady love, under great difficulties, to fix at last a wedding-day; she by that time being twenty, and he twenty-five.

During these years of courtship, they had both worked very hard, and saved some money. William's situation was as good as his sweetheart's was unpromising. Indeed, he always thought, and almost hoped too, that Anne must need nearly every farthing of her scanty wages for her dress. The proud youth delighted himself with the belief that she was dependent upon him; his love was pleased with the fancy that he should bestow everything on her, and receive nothing from her in return. He intended to set up a small shop of his own, and begin an independent business with his wedded life.

But the long self-reliance of his sweetheart had made her too proud to think of entering a home to which she contributed no tangible goods. It was kind and loving of William, she said, and like him, to declare that 'if she had thousands, he should like her none the better.' She should like to have thousands, just to give them to him. Yet, since she had not the income of a duchess or of a banker's heiress, she would do what she could towards enriching him with the income of a poor little servant-maid. She kept a secret stocking for her few, far-between, and hardly earned guineas. When William talked of anything he had bought, or contemplated buying, the loving maiden inwardly smiled with her delight at the sly, unexpected additions to his comfort and pleasure which it was her intention and in her power to add.

William's work was ten miles from his sweetheart's; so he had a walk of twenty miles whenever he wished to see her. He could afford this only once a week—namely, on Saturday evenings; for then he could sleep at a tavern, spend some of the Sunday with Anne, and return at night, to be in time for the work of the new week.

CHAPTER II.

It so fell out, between the second and third asking of the bans, that our little heroine was taken ill. Her cold mistress, having tried in vain to dissuade her from what she called the false step of marriage, believed every relative duty to be snapped between them by Anne's persistent refusal to continue a spinster. So soon, therefore, as she found her useless, she sent her away.

'You would make a convenience of my house, Anne Moss,' she said. 'You would stay under my roof, although you have already given me warning—fancy a servant giving warning, indeed—now, you will find your mistake. I don't know what your future husband may be—I am not rich enough to keep sick people and idlers. I think you will remember till the day of your death what a good mistress I have been. All the servants who have left my situation have wished themselves back again.'

Anne attempted in a meek spirit to discover and imagine all sorts of benefits received by her from Mrs Darah. It was a hard and microscopic task; however, she succeeded in it at last.

'I am sure, missus,' she said, 'I thank you heartily for all your kindnesses.'

'It is no more than your duty, Anne,' answered the lady, with a gratified smile and folding of the hands.

'No, missus. And if you see a young man walking about here on Saturday, looking up and down at the house, ma'am, would you be so very kind, ma'am, as to send the new servant, and ask him if his name is William Griffin; and if it is William, ma'am, to ask him to go to my father's, and I will send him word where I am, ma'am?' And Anne waited, trembling and blushing.

'Anne Moss, I can't think how you dare to take such a liberty with me and my house,' answered her mistress. 'I have always warned you of the folly and unfitness of young women, who have their living to get, keeping lovers. You know that my servants are not allowed to have followers; and it is most likely that I shall send an officer after the young man, instead of my servant, if I see him prowling up and down, looking into these windows.' So the girl left, dispirited.

Poor Anne feared to go and live with her drunken father, lest she should be insulted by any of his low associates, and lest he should be tempted to lay his hands upon the little store she had laid up for her William and herself. So she was obliged to seek a lodging in the town, where she could live decently until that day next week, when William would take her as his wife to her first and last real home.

The misfortune she most dreaded—namely, the dissipation of her little capital—began the moment she had left her mistress's house. To save expense, she made up her mind to carry her own trunk to her lodging. She tried to do so; but she found herself too weak. She was obliged to hire a carrier; and that involved a dip into 'William's money,' as she delighted to call it.

So that the dip might be as shallow as possible, she engaged a lad instead of a man for her porter. But before they had half reached the quarter of the town where Anne's lodging was situated, his boyhood began to evince itself in a very visible manner. He panted, and drew long breaths, and perspired greatly, and now and then stumbled under the weight. His pride tried to hide these signs. He endeavoured to stimulate himself with the thought of his payment; but his efforts at self-encouragement came out very plainly in certain noises, and in his unconscious compression and biting of his lips. The tender-hearted lass espied them: she could not endure to see him so vexed and inconvenienced; and so, for the rest of the way, she insisted on bearing half the weight.

When she had arrived in her room, and had dismissed her young porter, and sat down to rest herself, she began to feel the bitter results of her efforts with the heavy trunk. She was very ill when she started; she was now ten times worse. Her head ached fiercely; her breath was short, audible, and gasping; her whole body was parched and feverish.

She called her landlady into the room, and asked her for a little cold water. The woman had counted on providing a supper for her; as she heard her stay was to last only a week, she meant to make the week a paying one, so she had prepared some twopenny or three-halfpenny sausages, which were even then figuring in her mind's bill of fare at sixpence apiece. In rather a disappointed tone, therefore, she asked Anne if she should bring her nothing to eat. The poor girl said she was sure she could not swallow anything. The landlady said she had some beautiful new-laid eggs—they were a kind that wonderfully

cured headache and fever; indeed, she told her that if any of her neighbours were ill in that way, they always came and begged for one of these eggs. Anne was credulous, and did not doubt her landlady's possession of the medical hen which laid such eggs; but Anne was also resolute—no one could persuade her out of her own methods. She said that she felt a good long sleep was what she needed the most, and that she should at once go to bed.

But although she went to bed, she could get no sleep; all the long night she was tossing restlessly over and over. She remembered that William had promised, if he could get away, to call on her two or three times before Saturday, for which a friend had promised to lend him a horse and cart. She began to picture to herself his astonishment when he heard that she was gone, and she wondered if her mistress would relent, and be communicative. She made up her mind that, so soon as the morning had come, she would lie in wait for the new servant, as she went out shopping, and beg her to watch for William; and if he called, to tell him where his sweetheart had removed.

But, when the morning came, she knew nothing of purposes and resolutions; she was in a brain-fever, talking and rambling wildly.

The landlady wondered that she saw or heard nothing of her at breakfast; and going up to look after her, found her in that frightful condition. The woman neither knew what money she owned, nor where she came from, nor what connections she had. She sent for the parish doctor. He ordered a nurse for her immediately: so the woman of the house took upon herself to examine the maiden's trunk and pockets, counted out the time which she could keep her and a nurse for her without injury to herself, out of Anne's little store; and at once offered the place to a personal friend a few doors off.

For three weeks our poor little servant-maid lay unconscious of her condition, at the rough mercy of these two cormorants. Their negligence prolonged her illness. At the end of that time, the greater part of her hard-won capital was cruelly dissipated.

CHAPTER III.

Unhappy William Griffin, her natural protector, knew not all this time what had become of his darling. Two days after she had left the place, he was walking up and down before the house in his usual manner, hemming and coughing. He had never been so long at that exercise before. He concluded that Mrs Darah was detaining Anne, or was in the way somehow; or that Anne was mischievously prolonging the pleasure of hearing her lover's signals, remembering that it was nearly the last time she should do so for ever; so he hemmed and coughed louder. But still no one answered with a merry mocking hem and cough. No bright eyes suddenly peered above the blind; no round head gave him a series of short, sharp nods, indicating whether he should stay or depart.

'Well,' he said to himself, 'she is now more mine than her mistress's; I will knock at the door.' He did so, and was prepared to see either Anne or Dame Darah herself; but he started when the door was opened by a new servant. The truth flashed upon him at once. Mrs Darah had done with his Anne, and would not keep her, even on the ground upon which she undertook to stay for the coming week—namely, food and drink, but no pay.

The new maid could not inform him where his Anne had gone. She said that she had never seen the old servant, for her mistress gave her to understand that she was not good for much, and invited young men there, and that it was her—Mrs Darah's—invariable custom to see the old servant safely and

clearly out of the house before she admitted the new one, saying, that 'if they only laid their heads together for five minutes, they were sure to corrupt each other.' William uttered a strong and angry word or two, said he wished his Anne had left the day her time was out, bade the maid good-night, and departed. He went off at once to her father's. He found the miserable man sottish and maundering; he was incapable of being moved by the news of his daughter's departure, and as incapable of giving any clue to her present whereabouts. William ran down from the besotted creature's room, and found himself under the dark sky, not knowing whither to turn for his Anne. He went round to all the shops where he had ever known Anne to call. At each place they could only tell him that they had not seen her for the last three or four days, and that another young woman now came on Mrs Darah's errands. He exhausted all the time allowed him in this fruitless search. When he came to the place where he was to meet the friends who had promised to give him a lift on the way home, he found them gone; he had arrived too late; so he had to walk the ten miles alone, a miserable man, giving himself up to fears, to bemoanings, and once or twice to anger, to wonder, and even to suspicion.

Every evening, for a week, William walked twenty miles, from his work to the town and back, seeking his sweetheart, regularly visiting her father and that same series of tradesmen on whom he had called the first night of his loss. But he received no tidings, good or bad. Sometimes he felt that even bad news would be better than none, for the hope of any good explanation of her marvellous disappearance often died out for hours together. Still he persevered in his inquiry.

At last the young men, in one of the shops he was wont to call at, began to speculate upon his case. When he entered, they winked and smiled, and whispered to one another. They said they could very accurately perceive *what was what*: she had jilted him; but he was too great a booby to believe it. One or two of them asked if it would not be a true kindness to suggest *this* explanation to him.

They agreed that it would; and they did so. He answered with such scorn and passion, with such a violent assertion of his Anne's faithfulness, with such a fire and flash in his eyes, and with such threats against any one who should vilify her unjustly, that the suggesters wished they had let the subject alone.

At the end of the week, on the day which was to have been their wedding-day, while Anne lay tossing over restlessly, and talking wild nonsense, he came into the town to settle in his own house and shop. As night after night he returned alone to the house he had bought and furnished for another, still without news of her, he took forth from his memory the suggestion of the young shopmen; he laid it out, so to speak, before him; he turned it over and over; he looked at it in every light, on every side; he began to admit its possibility; and at last, in a morbid mood, he half believed it.

His shop was still unfinished, and he spent his time mainly in travelling hither and thither, seeking stock for it. But he went about all business poorly, with a heavy and half-broken heart. It seemed a mockery to him to be making such preparations. He did not believe he should live to use them. He did not want to do so. For the mystery of Anne's departure, her terrible silence, and his gradual, but surely excusable admission into his heart of suspicion of her faith and love towards him, plucked all the zest and purpose out of his life. It was for her sake he had worked submissively as a foreman so many years; for her sake he had stinted himself in dress, amusement, indulgences of all kinds, and found

delight in such sacrifices. Every cut of a saw, every blow of a hammer or mallet, every coat of paint, every boot and shoe, in his shop, held in his own mind some relation to her comfort and prosperity, as a part of that household of which she was about to be the daily sunshine; the source and centre of all its light and warmth and pleasantness; the measure of its work and rest.

CHAPTER IV.

At last Anne came to herself; in a little while she rose from her bed in good health. But she was quite penniless. Her greedy attendants had disposed of every mite of her little fortune; even her wedding-clothes had gone into the nasty hands of the pawn-brokers for medicine, food, and lodging.

She felt ashamed, the proud lass, to send after William, or let him see her as she was. She got a little employment as a charwoman, at one house and another, through the recommendations of the Sisters of Mercy and the parish clergyman, who were themselves too poor to give her any other help. But she kept from them the story of her love and betrothal, and by doing so, kept peace from the aching heart of her William; for the priest and the sisters, had they known it, would at once have sent her off to him, or have fetched him to her.

She made up her mind to continue cheerfully at charring, until she could repurchase some of her good clothes. She would then visit William, make known her condition to him, confess all the story of her savings, and the sad way in which it was lost, and steadily insist upon the wedding being put off until she had removed her uneasiness, and regained her sense of independence by recovering at least some part of her former wealth. Her disposition was all compact of cheerfulness and hope. Whenever she had found anything broken, instead of standing over it crying, she had looked to see if it could be mended; if it could, she set about mending it; if it could not, she tried to procure another thing of its kind.

So she dealt with her own broken prospects, just as she had been used to deal with her mistress's broken china. She kept her mind fixed upon their restoration. This hope gave her great zest and eagerness in her servile work. She never let herself remember that the time had come in which, except for her misfortune, she should have been a bride and a mistress of a household; but she set about her dull actualities as if no such bright possibility had ever belonged to her. She looked forward to the glory of that moment when she should again find her head at rest on the dear shoulder of her William. She went to her work singing, she came from it singing. She said to herself: 'To think would destroy me; I shall never be able to recover myself if I ponder on my loss and my present state.'

Thus she kept up a fever of counter-excitement by shutting out of her thoughts all truth which might excite her—the truth of her own loss, the truth of William's astonishment and pain. Whenever she found her mind inclining to the realisation of his sufferings, she would sigh and grieve; but the moment the echo of her sigh struck athwart her consciousness, she arrested herself. 'This will not do,' she would say; 'it will be all the better afterwards; our happiness will more than make up for our misery.' She never waited in quietness of spirit, and calmly analysed or probed these ill-digested, hasty deductions. If she had done so, she would have espied a monstrous residuum of 'proper pride' underlying all the other elements of her reluctance to see William as she was. If she had done so, she would have seen what wretchedness, doubt, and despair she was sowing in the true heart of her William. When that quakerly impulse sprang up in her, she scrubbed, or walked,

or hummed more vigorously; if a tear for William started into her eye, she used it as mercilessly as her sighs, and brushed it hurriedly away. She felt that if she looked at the present, she should be weakened, and do nothing. It was only by keeping the end before her that she could find spirit and moral sinew for work. And whilst she was at work, her efforts raised a dust round her which hid everything but those efforts.

But where was the need of all this? what was the end of her eager and incessant strivings? Would William love her the less for having suffered and lost all? Would he love her the less for having but one gown, and that an old and ragged one? for having shoes with holes in them? for being penniless? She knew him better; she knew that he never suspected she had a farthing of her own. She knew that the thought was a delightful one to his open, generous nature, as it made him feel himself the supplier of all her needs. But the little maid was vain. She had tasted the sweet, pernicious, intoxicating draught of false independence. The draught gave her stimulus for her work. In a few weeks, she had made enough to redeem her best new dresses, her shoes, and other articles of dress, and to pay her standing debts.

William, in the meantime, not having, like Anne, any insight into the causes of her mysterious absence and silence, could not, as she did, find solace, excitement, and delight, in looking forward. On the contrary, the future was his most bitter thought. His disappointments lay there. All the glory of his life was behind him—gone by for ever. And even that past glory, since suspicion and the present appearance of things had begun to cloud it, lost all its golden worth. It had been no true possession. It was miserable to think that, even when he was most happy, he was only so by being ignorant of the truth, by trusting in heartless and well-acted deceit. Before him, he could see nothing but unescapable misery; in the present, his thoughts exercised themselves worryingly on the causes of Anne's strange departure, until by slow processes, not without, as he conceived, two ocular proofs, he admitted the awful and maddening conclusion that she was dishonest and unfaithful.

The first ocular proof was as follows: One dark foggy night, going from the station to his home, after a dull day, all through which his body had been taken up by business, but he himself by the fiery vexation of his thoughts, a shape rushed by him which startled him, it was so like Anne. He would almost have ventured on oath it was her. Without thinking, he pursued the figure. It turned down some darker street, and was lost in the fog.—The other glimpse he had of it deepened his persuasion that it was really his affianced bride whom he had seen. 'Whose is she now? What relation to those she chooses in preference to me?' He went home with these thoughts burning at his heart.

Still he determined with himself that he would not be unjust. He fought a brave hard battle with his suspicions. The faith of his heart in Anne strove against that testimony of his senses, and overcame. He concluded that his senses had deluded him. But he also concluded that if Anne were in the town, and could keep herself from him at a time when she was so sacredly bound, it must be because she had some other lover. But he found this hard to believe. The very memory, almost the taste, of her last kisses rose to contradict it. He could not persuade himself that those kisses were deceitful and counterfeit.

A few days after, as he was walking slowly along, musing gloomily over this mysterious blow, he chanced suddenly to look up, and saw the sunshine fall upon a shape which he had now no doubt of. He saw it was Anne who hurriedly turned the corner

at the end of the street. He was determined to stop her and upbraid her; he felt in a moment half strong enough to fling back in her face the love of long years. On second thoughts, however, he resolved to discover where she was living, and for whom and for what she had broken her faith. He noticed that her clothes were very ragged and ill-looking; perhaps already she had begun to earn the wages of unfaithfulness by being cruelly used. He kept at a moderate distance behind her, slinking and hiding between intervenient persons. In this way he followed her through several streets; but turning suddenly in a more crowded thoroughfare, as he was straining forward eagerly to keep a glimpse of Anne at the distance, quite regardless of what was near, a burly dustman ran against him. He stumbled and fell. When he sprang up again, he could see nothing of that soiled bonnet and torn dress his eyes had been so steadily pursuing. Alas! he thought to himself, what matters it to find where she is, what she is doing. Plainly she was in the town; near him, yet not caring to see him; trying to conceal herself from him. Her very rage, perhaps, was but a disguise.

He felt so faint and bewildered, that he had to stumble into a tavern and call for some brandy. As he sat still there, looking the awful changes of his life in the face, he made up his mind to depart out of the country. A map of New Zealand hung on one side of the fire, a view of Otago on the other. He talked with two men in the room about emigration. The old town of his youth, the theatre now of such a mockery, seemed to grow hateful to him. He talked with these men until they persuaded him to emigrate. But it was not the golden visions of wealth which they set before him that tempted him; he was impelled by the strong desire to burst all his present trammels. He hardly knew whether his pride and indignation would save, or his sense of loss destroy him. He made up his mind to get rid of everything—shop, and house, and business, at once.

In two hours' time—having made an appointment with the men for the next day—he returned to his shop. Two or three painters immediately came up to him with inquiries. Would he have the shutters painted green? or grained like oak? or picked out with different colours?

He pushed by them, answering: 'Oh, anyhow.'

The men looked confused. Experience had taught them that anyhow was always wrong. One of them advised oak.

'I don't care the least how the shutters are painted. I shall never see them, I hope. I shall sell the shop, and go off in a day or two to New Zealand.'

The men fell back, and stared at one another. They looked at him again, as doubting whether or no he was drunk, or had begun to grow insane through his troubles, which all of them pretty accurately knew. The master determined to present his bill, and insure payment. William said that he would pay him immediately. While watching the painter make out his bill, his young apprentice came whistling into the shop. After a little while, he said to William:

'Have you seen the person in the parlour, sir?'

'What person? No,' said he.

'There was one came for you an hour ago,' said the lad, 'and she told me she should wait until you came in.'

William gave a murmur, a sigh, and pushed his way gloomily through the workmen, and implements, and packages into the room at the back of the shop. Some one fell back as he did so. Ah! through the little window betwixt the shop and parlour, Anne has been watching him ever since he came in. Her heart lashed her with pain and woe as she saw the thin figure and pinched, altered face, and felt that

she had made him so meagre and so white. She leaned on the sill and sobbed. She dared not go through to him, for she feared the scene of their meeting in the open gaze of the workmen.

Nor shall I describe that scene here. It was a long while before either of them could realise its truth, and particularly before William could. He asked if he had not passed her one night in the fog. She answered yes, and that the night and the early morning were the only times she dared go out, she so dreaded meeting him. He asked her if he had not seen her that very day, three hours ago. She blushed, and pointed to her dress. William looked down at it: it was a silken one. She told him she was rushing to fetch it out of pawn on purpose to visit him, and explain herself, when he perceived her that morning; and then she added all the story of her illness and penury, with many tears and prayers for forgiveness. William was so thankful that he wondered what he could have to forgive. Her proposals to regain her little capital, 'just for vanity's sake,' he would not listen to, but demanded as the only penance that they should be married before any more separations were possible. He called on the emigration agents—who said he was a very fickle man—and broke off his negotiations; but as a kind of recompense, he invited them to eat, drink, and dance at his wedding.

THE NATURE AND CONSEQUENCES OF BRITISH STORMS.

SECOND PAPER.

WHEN people all declare that the weather is unusually mild for the season, when a southerly wind and a cloudy sky raise the temperature, and send down the mercury in the weather-glass, then, as cautious Moore hath it, 'a storm may be expected about this time.' Let Brown forbear to sail on the river, or, at least, to make fast the sheet of the sprit-sail, for sudden gusts usher in a coming cyclone. Let the hardy fishermen from Peterhead to Cullercoats haul up high and dry on the beach their open undecked boats, and mend their nets and lines, seated cozily among wives and children, until the season of uncertainty is passed. Let the good ship *Mary Anne*, A1 at Lloyd's, lie snugly moored in Liverpool docks a few days more, if she would avoid foul winds, head seas, and the 'merchant-marring rocks' of the rugged Irish coast on her lee. Let the richly laden merchantman in the Channel, homeward-bound, after surmounting the perils of a long voyage, hasten to secure the friendly aid of a steam-tug, if she would escape being driven on to the Goodwin Sands; and let the dusky collier-brig set all studding-sails aloft and aloft to gain the port before she rolls and pitches in an angry sea, and heels over to the gale. Let each miner walk as warily in the bowels of the earth as if he were in a powder-magazine; for the explosive gases are hissing audibly as they rush from every crevice, the ventilation is slackening, and the lives of all in the mine are forfeited if reckless Jones enters his 'bord' with a naked candle, or thoughtless Robinson tries to light a pipe at his Davy-lamp. Let farmers, shepherds, gardeners, invalids, &c., take suitable measures beforehand, for a cyclone cometh, a sudden change of weather, and probably a great storm.

The premonitory symptoms of a coming storm, the precise way in which a vessel will be attacked by it,

and the excellent practical rules which Sir W. Reid has given for the proper management of a vessel in a storm, are an important part of the education of a sailor, to whom a practical knowledge of cyclonology is now indispensable. The philosophical landsman will also be interested in a science which offers explanations of the continued easterly winds of an English spring, of the general prevalence of westerly winds in Britain at other seasons of the year, of the excessive changeableness of the climate of the British Islands, of the occurrence of great inundations, and of the extreme frequency of explosions in coal-mines; for these are all direct consequences of the nature and laws of British storms, or, to speak correctly, of North Atlantic cyclones.

Hurricanes, in some manner as yet unknown, are the offspring of an excessively heated atmosphere. They all begin near the equator, and are most frequent in any tropical country just after the season of greatest heat there. The hurricane season in the West Indies begins in August: and from August to the end of the following spring, cyclones come rushing across the Atlantic to Europe, not 'as single spies, but in battalions.' Every cyclone, however, does not announce itself here as a *storm of wind*; for while some are of a boisterous nature, and gyrate with all the speed of a fast young lady in a polka, others, more decorous, move round with the slow and solemn gravity of a douce matron of the old school. The presence of these peaceable cyclones is not made known to us by the force, but by the order of succession in the changes of direction of the wind, and by the peculiar cyclonic fluctuations of the mercury in the barometer and thermometer.

The average central track of the numerous cyclones that have been traced across the North Atlantic Ocean by Redfield, Reid, Maury, and others, passes a little to the north of Scotland, and tends towards the north-east point of the compass. As the British Islands lie somewhat to the south of this mean central route, it follows that the southern halves of cyclones will most frequently sweep over Britain, and, consequently, that the prevailing winds here will be from the southward and westward. Now, the southerly winds heap up in front of the advancing cyclone the heated air of the tropical regions, so that the approach of a cyclone to Britain is generally signalled by a considerable rise of the mercury in the thermometer, as well as by a fall of that in the barometer, as already explained. Hence, when a series of cyclones passes over Britain—and they are usually gregarious, although they come in single file—we experience a rapid and successive alternation of southerly and northerly winds, and therefore of hot and cold days, together with all the other changes of weather which attend sudden fluctuations in the density and dryness of the atmosphere. The extreme changeableness of the climate of the British Islands, therefore, arises from their being situated on the southern side of the mean central track of all the cyclones that cross the North Atlantic Ocean; and the general prevalence of westerly winds here is obviously due to the same cause.

As the West Indian cyclones generated in August, soon after the sun has attained his greatest northern declination, have all the violence of hurricanes, and move so rapidly poleward as to pass to the northward of Britain; so those generated about the time that the sun reaches his greatest southern declination, appear to be of a feebler nature with respect to their power of moving poleward, their centres often passing to the southward of Britain, causing a succession of easterly winds here, and at the same time heavy storms in the Bay of Biscay, Portugal, Spain, and the Mediterranean Sea. This is the source of those cutting east winds in spring, which have such a

pernicious influence on the health and temper, that Pope has chosen them for the peculiar atmosphere of 'the gloomy cave of Spleen' in the *Rape of the Lock*:

No cheerful breeze this sullen region knows;
The dreaded east is all the wind that blows.

M. Liail, of the Imperial Observatory of Paris, in tracing the course of the great Balaklava tempest from England across the continent beyond the Caucasian mountains, has shewn that it was an immense cyclone of which the centre passed to the south of England. During the three or four days of its transit across our meridian, the winds were easterly without exception from the Land's End to John O'Groats's.

This was also the case with the twin-cyclones that caused the great inundations in France at the end of the spring of 1856. The average cyclone track across the North Atlantic deviates little from the course of the Gulf-stream, whose warm surface is always overhung with copious vapours. Each cyclone, therefore, collects, during its progress across the ocean, an abundance of moisture to be discharged on the western coasts of Europe in the form of heavy rains. Cyclones that pass through low latitudes bordering on the tropics, also gather enormous accumulations of moisture to be precipitated on the mountain-chains of Southern Europe, thus producing those tremendous inundations so destructive to life and property as to rank among national calamities.

The most disastrous inundations in France during the present century, with the exception of those of 1856, occurred in 1844, immediately after the arrival at Europe of the great Cuba cyclone, so ably traced across the Atlantic up to our very shores by Messrs Redfield and Reid; and again in 1846, also just after the arrival of another great cyclone, traced also by those discoverers of the nature and laws of storms. The greatest and most sudden inundation recorded in our annals was that caused by the Moray floods in August 1829; resembling those in France as to their cyclonic origin, but by no means of parallel magnitude.

The greatly increased risk of explosions of fire-damp in coal-mines is one of the most important consequences of the approach of a cyclone to the British Islands. This additional risk arises from two distinct sources: the diminished atmospheric pressure, indicated by the fall of the mercury in the barometer, permits an unusually large issue of inflammable gas from the coal into the workings of the mine; and the simultaneous rise of the temperature of the exterior air checks the ventilation, and thereby leaves the gas to accumulate below.

That gas is most abundant in the galleries of coal-mines, and that explosions are most frequent, during warm southerly winds, when the thermometric column is high, and the barometric column low, has long been well known to practical miners both in England and France; and the evidence on this head, given before the several committees of the Houses of Lords and Commons on accidents in coal-mines, is both abundant and satisfactory. Many of the special examples of the influence of atmospheric perturbations in causing explosions are very striking and conclusive. For instance, the barometric depression during the passage over Britain of the northern half of the Balaklava cyclone began on the 11th, and ended on the 19th of November 1854, and was lowest on the 15th. During the four days when the atmospheric pressure was least, there occurred explosions in six different coal-mines, in localities remote from each other, but all under the dominion of the passing cyclone. On the 13th, there was an explosion in Worcestershire; on the 14th, an explosion in

Northumberland; on the 15th, when the mercurial column was lowest, there were three explosions—in Lancashire, Worcestershire, and Monmouthshire, respectively; and on the 16th, there was an explosion in Scotland. Just before the great explosion at Lundhill Colliery, near Barnsley, in February 1857, the most destructive to human life on record, there was a sudden rise of temperature of more than twenty degrees Fahrenheit, and a fall of the barometric column, both caused by a passing cyclone.

In such cases, an inquest is held on the unfortunate victims, and the stereotyped verdict returned that the accident was quite unaccountable, and no one to blame. It may have been so, for some explosions certainly do happen independently of the previous state of the weather; but in nine cases out of ten, an examination of the meteorological conditions that immediately preceded the explosion will shew that the approaching epoch of increased danger might have been foreseen, and proper precautions taken beforehand. This is a matter of growing importance, for explosions are becoming every year more numerous and more destructive.

One hundred and twelve persons lost their lives by one explosion at the Cymmer Colliery, near Cardiff, in July 1856; and about two hundred persons were destroyed under circumstances of an unusually painful nature, by the above-mentioned explosion at Lundhill Colliery. These two, of upwards of six hundred explosions of which the dates and details are known, have been the most destructive to human life. The following statistics, compiled from the excellent periodical, *Reports of the Government Inspectors of Mines*, shew that the number of recorded explosions is increasing from year to year: 1851, 66 explosions, 270 lives lost; 1852, 74 explosions, 209 lives lost; 1853, 77 explosions, 204 lives lost; 1854, 84 explosions, 209 lives lost; 1855, 95 explosions, 136 lives lost. In 1855, the number of explosions spread over the whole year, gives one explosion for every four days; so that by this time the annual number is probably approximating to an average of two explosions in each week.

It may be interesting to indicate some of the effects of such gentle cyclones, as, on account of their inferior velocity of rotation, are not accompanied by strong winds. Suppose one of these to approach our shores in early spring. For three or four days, mild and moderate breezes blow gently from the sunny south, veering slowly to south-west and west; presently the bright little daisy thrusts his modest head above the relaxed earth, 'the lusty sap begins to move'; forest-trees bud, and orchard-trees blossom, promising kindly fruits in autumn; busy little birds flutter joyfully hither and thither in pairs; and the speckled trout, thin and lanky after his long hybernation under a friendly stone, turns his head up-stream, and now and then dimples the surface as he forces his acquaintance on some unfortunate avant-courier of the ephemeral tribe. Coughs and colds abate, and great-coats are laid aside. Among the many hundreds of coal-mines in England, Scotland, and Wales, there are few that are not suddenly afflicted with asthma, evinced by the impeded action of their breathing organs, the up-cast and down-cast shafts; and the flame of the miners' candle is reduced to an ominous little blue halo far above the wick. In the county newspapers of Staffordshire or Wales appear isolated accounts of explosions, juries as usual pronouncing exculpatory verdicts. The bodies recovered from the black abysses are decently interred, and a generous subscription relieves for a time the more pressing wants of widows and orphans.

Suppose, now, the first cyclone to be immediately succeeded by another, of which the centre moves slowly up the Mediterranean towards the Black Sea.

A week or two of cold searching easterly winds soon blight all the fair promises of the premature spring, a frost nips the tender buds and blossoms, a sprinkling of snow powders the heads of the northern hills, and old folk talk of the unhealthiness of a black-thorn winter. Again, 'coughing drowns the parson's saw.' But, it's an ill wind that blows nobody good, and coal-mines now throw off their asthmatic symptoms, breathing freely through their huge throats. Explosions are not heard of again until a sudden return of hot weather, or a season of greatly diminished atmospheric pressure.

THE GREAT DRAGON OF CHINA.

I.

'ONCE upon a time,' there was a great dragon that lived in a flowery land; he came out of the bottomless pit, and he was so vast that his body reached from the frozen north to the burning tropics, and his claws stretched over a thousand miles, and his tail lay along a hundred rivers, and for his dinner every day he ate up as many little new-born children as their mothers would bring him and place in his hungry maw. Thirty thousand children every year did the dragon eat up; but no one grieved for them, so long as he kept his claws off the grown-up people; and they brought their children, and gave them up without a tear, and the dragon grew more fat, and strong, and lively every day.

And, as for the mothers, they did not weep, and lament, or refuse to be comforted—not they. Their children, especially if they were daughters, were better in the dragon's belly than living the life their mothers lived; better, said they, not to be, than to toil and starve like us.

So the great dragon of infanticide lay along the length and breadth of the land; and the tender new-born infant was exposed on the public road, to be caught up in his fangs, or cast away into the waters of those silent highways that lead to the great deep.

Long did the hearts of English mothers refuse to believe the existence of so terrible a curse upon the land. Here is the testimony of one who occupied the highest position in science, and whose life, after he had braved a thousand perils by water in his voyages round the globe, was lost by fire in the frightful catastrophe on the railway from Paris to Versailles, in May 1842. 'In China,' says the unfortunate Dumont d'Urville, in his *Picturesque Voyage round the World*—'in China, the father has the power of selling his child as a slave; and whether from poverty or caprice, the fathers frequently avail themselves of their rights. Daughters especially are trafficked in. Humanity and paternal affection are virtues unknown to the Chinese, who have no thought but for themselves. It is undoubtedly to this brutalising egotism that we must refer the enormous number of infanticides which are perpetrated every year in that country.'

'So far from punishing this atrocity, the government seems to tolerate and almost to authorise it. It is one of the duties of the police of Peking to collect, every morning, the infants which have been "thrown away" during the night. They pile up the victims in a tumbrel, and cart them away pell-mell, the living and the dead, and shoot them into a common sewer outside the city. Some authors have computed the annual number of infanticides at not less than thirty thousand. The natives who live on the banks of the rivers abandon their children to the current, after having attached to the back of the neck a gourd, to

keep their heads above water. It was an everyday occurrence to see the corpses of children floating down the stream; and the boatmen who pass pay them no more attention than they would to a dead dog.' 'The dark places of the earth are full of the habitations of cruelty;' and there is not a leavening grain of humanity in the religion of the Chinese. Some spark of natural feeling has originated the doctrine of a continual metempsychosis; so that the mother, if she has any remorse in putting her child to death, may console herself that she is only giving its spirit a passage from one body to another tenement more or less assimilated to the human form divine.

The Chinese laws are as merciful to this crime as our own legislature to that of wife-beating. One of the mandarins' edicts, after a long preamble on things in general, runs thus: 'We regret to find that in our flowery province the lives of infants are far from long. This is not good. Attention must be paid, and alteration made for the future.'

In the year 1845, the emperor of China published an edict to repress the prevalence of infanticide. He begs the parents to send the infants to the asylums rather than expose them to be devoured by wild beasts, or cast them into the rivers; and—in a country where capital punishment, be it remembered, is awarded for the most trivial offences—he threatens all future offenders with the punishment of sixty blows of the stick for each offence.

So the dragon ate up the little children, and no one hindered him.

II.

It was Forbin Janson, bishop of Nancy, whose genius first discovered, and whose courage and energy were able to wield the weapon that could slay the destroyer.

With a large experience acquired from his missionary travels in the east, he combined the motive-power of religious enthusiasm and a fervent philanthropy; and when he had entered into the appalling details of the curse of China, he spared no faculty of mind or body till he had set in motion his scheme for the deliverance of the victims of infanticide.

The price of a new-born infant in China was said to be 200 sapees, or about a shilling; increasing up to ten shillings for a child of ten years; and the worthy bishop determined to try the power of money on those hearts that were insensible to nobler feelings.

But where should he obtain the necessary funds?

The outlets for benevolence are even more numerous in France than in England. Every day, charity knocks at the door, and opens the purses of rich and poor for the support of asylums, of hospitals, and a thousand institutions which have no other source of revenue than voluntary contributions.

There yet remained, thought the bishop, one class who were exempt from contribution.

It was for tender infants he besought assistance to rescue them from a violent death. It was to the children of his faith he determined to appeal for the means to carry on the good work. He resolved to enlist the tender sympathies of the little children, and make them the saviours of thousands of innocents from a cruel and hopeless doom.

The worthy bishop disseminated his plan throughout the families of the rich and powerful world of Paris, and the heads of the church co-operated with him in obtaining contributions, by processions, by masses, and charity-sermons. He himself started for Belgium, and knocked at the door of King Leopold's palace, and soon counted the royal children as contributors and patrons of his enterprise. He collected by these means a sum of 50,000 francs; but unhappily before he could realise the success of his labours, he was seized with illness while pursuing his self-imposed

duties, and fell a victim to his zeal and devotion to the good cause.

His work was not suffered to die with him. A worthy successor was found in the person of Archbishop Bonamie, who applied himself to the task with equal ardour, and obtained a glorious harvest of success. In 1846, the society of the *Sainte Enfance*, as it is called, was enabled to send out a regular mission to Macao, provided with all the means and appliances of conversion, crucifixes, medallions, and above all, sapees to the amount of 190,000 francs, for the purpose of purchasing Chinese infants, to be brought up within the pale of the Romish Church.

Moored off the harbour at Macao might be seen, in 1847, a handsome vessel, the *Stella Maris*, freighted with those who had devoted themselves to the work of delivering the souls appointed to die. *Fervet opus*; the traffic has begun. In a few weeks, a commodious asylum was erected on the shore, for the reception of the ransomed innocents. Round the sides of a spacious and well-ventilated apartment are ranged the cradles and cribs of the little purchases—*le petit commerce*, as the Père Werner delights to call them; while twelve sisters of charity in the simple and tidy habit of their order, tend their little nurslings, and repay themselves for their solicitude by the smiles and kisses of their charges. One of this pious sisterhood has come to China to revenge her brother's death, who was massacred by the Chinese while engaged as a missionary. She is taking the revenge of a Christian, rendering good for evil.

Father Werner has also established a nursery at Lut-kug, where the poor women who are employed on the canals, and labour at the oar as hard as our Thames bargemen, can leave their children for the day and receive them again in the evening, and solace themselves with their caresses after the heavy fatigues of the oar. What a blessing for the poor little things to be cared for in a cool and quiet apartment, instead of being tied to their mothers' backs while they labour under a scorching sun, and sharing with them the burden and heat of the day!

In two days the good father has sometimes saved the lives of 50 infants, by purchasing them at the price of a crucifix, or a medallion, or a few pence.

In 1848 the society recorded the number of 68,477 baptisms, and was supporting 62 boys', and 134 girls' schools.

Every year collections are made in the churches of Paris, and the little children of the rich contribute their alms for the redemption of their perishing little brothers and sisters in China. Even in the depths of Lower Brittany the good work finds support. Every year a procession of more than two thousand children, each with a little banner in its hands, winds through the streets of Quimper to solemnise in the old cathedral the fête of the *Sainte Enfance*; and a wealthy lady of Dinan has adopted several of the little Chinese orphans; and little exotics may be seen transplanted to the soil of Brittany and flourishing vigorously in that healthy air.

The head-quarters of the army which the French have sent to fight the dragon of China and extirpate idolatry are at No. 4 Rue Chanoinesse, at Paris; where may be seen the whole *matériel* of the war, its arms and munitions, its annals and its trophies. They have a mighty army, well furnished with the sinews of war, and led on by victorious generals; their triumphs are over the powers of darkness, their prisoners are captives to the yoke of Christ, and their laurels will be a crown of glory.

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